APPENDIX A

CHECKLIST FOR STORMWATER MANAGEMENT PLAN (SMP) UNDER LAND DISTURBANCE PERMIT REVIEW

The following checklist is a guide for applicants to ensure that they provide required or often-submitted information. Fulfillment of the checklist does not supersede the requirement of reviewing the Storm Water Regulations Manual and providing all information and materials required therein. Please check the box to indicate the item has been provided or provide a waiver request and an explanation why the item does not apply and submit this checklist with the application.

I. BASIC SUBMISSION MATERIALS

☐ A completed Land Disturbance Application form signed by the applicant and owner of record of the property.

☐ Abutters list including the names and mailing addresses of all abutting owners of record as defined herein.

☐ A check, made payable to the City of Manchester, or cash to include all fees required by Section 4(B) of the DPW Storm Water Regulations Manual.

☐ A copy of the existing deed for the property, and copies of all proposed deeds, covenants, or other legal documents to which the City of Manchester may be a party.

☐ Written requests for any waivers of the City's Storm Water Regulations Manual, with written justification.

☐ A list of all state and federal permits reviewed, applicability, and if required their status, including, but not limited to: Alteration of Terrain, On-site Sewage Disposal, Wetland and / or US Army Corps of Engineers, Shoreland, Public Water System, Privately Owned Sewerage, and Sewer Connection Permit, Dam permit (for construction of embankments).

☐ Five copies of a letter or report describing:

- ☐ a summary of the proposed project with parcel ID and size of proposed alteration
- ☐ existing and proposed conditions with calculation of the change in impervious area
- ☐ a summary of the drainage analysis including:
  - ☐ calculations showing a comparison of the estimated peak flow and volumes for the 1-inch, 2-year, 10-year, 25-year, and 50-year, 24-hour storm at each of the outlet locations and demonstrating that post-development peak runoff rate does not exceed the pre-development peak runoff rate – undeveloped land shall be assumed to be in "good" condition

- ☐ a demonstration that the 100-year, 24 hour storm will not increase flooding impacts off-site
- ☐ calculations showing the sizing of emergency overflow structures and armor protection using the 50-year, 24-hour frequency storm discharge rate and maintaining one foot of freeboard at peak times with orifices and outlets blocked
- ☐ figures/diagrams to support drainage analysis calculations showing:
  - ☐ existing and proposed development impervious surfaces
  - ☐ labeled sub-catchments, reaches and ponds
  - ☐ culverts and other conveyance structures
  - ☐ time of concentration (Tc) lines
  - ☐ hydrologic soil groups – HSGs used in the calculations should match the HSGs on the maps

☐ how, with supporting calculations, the proposed project meets the performance standards of the City's Stormwater Management Regulations Manual, including, but not limited to:

- ☐ use of LID practices to reduce the generation of stormwater runoff or description why LID strategies are not appropriate
- ☐ construction and waste materials, chemical, and fuels expected to be stored and used on-site and controls to reduce pollutants from these materials
- ☐ all infiltration and dry detention structures drain within 72 hours
- ☐ recharge volumes by HSG and method for determining infiltration rates
- ☐ 80% removal of TSS and 50% removal of both total nitrogen and total phosphorus for all new development projects and redevelopment projects having less than 40% existing impervious surface coverage demonstrated consistent with EPA Region 1 BMP removal tools
- ☐ technique for managing water quality from redevelopment projects having more than 40% existing impervious coverage:
  - ☐ disconnection or treatment of 30% of the existing impervious cover as well as 50% of the additional proposed impervious surface and pavement area through the application of filtration media; or
  - ☐ implement other LID techniques onsite to the maximum extent practicable to provide treatment of runoff generated from at least 50% of the entire site area; or
  - ☐ off-site mitigation equivalent to the above
- ☐ salt storage areas are fully covered and runoff from these areas enters treatment areas before being discharged to receiving waters or allowed to infiltrate into groundwater

- ☐ proposed snow storage areas are adequately sized for the proposed parking area footprint
- ☐ no infiltration provided, except for roof runoff, on sites with vehicle fueling facilities/gas stations, locations with outdoor vehicle service, maintenance and equipment cleaning area, outdoor storage and loading/unloading areas of hazardous substances, and SARA 312 generators if materials or containers are exposed to rainfall
- ☐ pretreatment and sealed or lined treatment BMPs used at sites with other higher pollutant loads
- ☐ stream and wetland crossings comply with Env-Wt 900

☐ receiving waters and impairments and how BMPs are designed to minimize the discharge of these pollutants where applicable

- ☐ demonstration of no net increase of nitrogen in discharges, direct or indirect, to nitrogen impaired waters
- ☐ demonstration of no net increase of phosphorus in discharges, direct or indirect, to phosphorous impaired waters
- ☐ summary of measures to minimize salt usage for discharges in watersheds of chloride impaired waters and commitment to report salt usage to the UNH Technology Transfer Center online tool or to City of Manchester DPW

☐ proposed erosion and sediment controls.

☐ Five copies of a long-term maintenance agreement (LTMA) and Inspection and Maintenance Plan developed in accordance with DPW's Storm Water Regulations Manual and DPW's Standard Specifications for Road, Drain & Sewer Construction.

☐ For high-load areas and commercial parking areas with over 1,000 trip ends per day, five copies of a source control plan in accordance with DPW's Standard Specifications for Road, Drain & Sewer Construction.

☐ Calculations supporting the design of the stormwater management system and its compliance with the performance standards established in the Standard Specifications. All calculations shall comply with the standards, procedures and methods described in the latest version of the New Hampshire Stormwater Manual.

II. SITE PLAN

☐ Six copies of an accurate plan with all sheets 22" x 34" at a scale sufficient to show all pertinent details and drawn in black ink. In addition, four reduced copies at 11" x 17" and one at 8½" x 11" of the entire plan set shall be submitted.

☐ The seal of a registered architect, landscape architect, engineer, wetland scientist, or surveyor, as appropriate, on each sheet.

☐ For final approval of a plan, the applicant shall submit a complete mylar plan set to be kept on file with the Department of Public Works and six paper copies of the plan set.

(A) *General Information*.

☐ Name and contact information of the applicant and name of the owner of record.

☐ A Title Block that includes title, date, scale, sheet numbers, applicant's contact information, and the map and lot number of subject parcel or parcels, located at either the lower-right corner of the plan or along the right edge

☐ A rectangular box of at least 4.5 inches wide by 2 inches tall located above the title block that shall be reserved for an approval stamp and signature

☐ A north arrow, pointing up whenever possible

☐ Plan references, located at the top-left corner of the plan

☐ Notes located on the right side of the plan

☐ In table or other appropriate form: total area of disturbance proposed, total area of existing and new impervious surface created, total area of disturbance proposed on slopes $\geq$15%, total area of existing and new impervious surface created on slopes $\geq$15% lot area, setbacks, buffers, coverage, building and paved area.

☐ If the project disturbs one acre of more of land, a note stating, "A Notice of Intent shall be prepared and submitted to the Environmental Protection Agency under the National Pollutant Discharge and Elimination System (NPDES) Construction General Permit (CGP). A Stormwater Pollution Prevention Plan (SWPPP) shall be prepared and maintained on site. The NOI and SWPPP shall also be submitted to DPW."

☐ A note stating, "If, during construction, it becomes apparent that additional erosion-control measures are required to stop any erosion on the construction site, the property owner shall be required to install the necessary erosion protection at no expense to the City."

☐ A note stating, "All improvements specified on these site plans shall be constructed, completed, inspected, and approved by the City prior to the issuance of a certificate of occupancy, where applicable. All stormwater structures shall be inspected and cleaned following site stabilization and prior to issuance of a certificate of occupancy, where applicable. A report including the inspection findings and cleaning activities shall be submitted to DPW."

☐ Where infiltration systems are provided, a note stating, "The Contractor shall stake out and protect the proposed infiltration systems during all construction activities." Include notes that detail how the infiltration areas will be protected from compaction during construction activities or that sub-soils will be modified/re-generated following construction activities to ensure that the sub-soil infiltration capabilities that were modeled are maintained when the system becomes operational.

☐ When the owner is the developer of the property, there shall be a statement on the site-plan cover sheet, signed by the owner, stating, "It is hereby agreed that, as the owner/developer of the property, I will construct the project as approved and as shown on the enclosed set of plans. Further, I agree to maintain the site improvements for the duration of the use in accordance with the LTMA,"

☐ When the owner is not the developer of the property, and the property is instead developed by a lessee, there shall be a note on the site-plan cover sheet signed by the lessee-developer stating, "It is hereby agreed that, as the lessee-developer of this property, under a long-term lease with the owner, I, as lessee-developer, will adhere to the conditions noted on this plan and construct and maintain the necessary improvements as shown hereon and in accordance with the LTMA." There shall also be a note on the plan cover sheet signed by the owner stating, "It is hereby agreed that, as the owner of this property, I consent to the conditions noted on this plan. I understand that these conditions are required to allow the modifications requested by the lessee-developer and I consent for them to be constructed on this property."

☐ A note stating, "All conditions subsequent to approval shall be completed within two years of the date of final approval."

(B) *Property*.

☐ Boundary lines of the property including bearings and dimensions.

☐ Existing and proposed contours at intervals of two (2) feet with source of contours noted on the plan and spot grades where necessary for sites that are flat.

☐ Location, width and purpose of all existing and proposed easements and rights-of-way on the property.

☐ Location of all existing stormwater conveyances, impoundments, water courses, wetlands, buffers or shoreland areas, any water quality impairments of receiving waters receiving discharge from the site, and other significant physical features, and where applicable, the 100-year base flood elevation on or adjacent to the site or into which stormwater flows.

☐ Existing and proposed development impervious surfaces, buildings and structures, building setbacks and buffers, mature vegetation, temporary and permanent stormwater management elements and best management practices (BMPs), including BMP GIS coordinates and GIS files, and important hydrologic features created or preserved on the site.

☐ Storage locations for fuel, chemicals, chemical or industrial wastes, and biodegradable raw materials.

☐ A note stating the purpose of the plan.

(C) *Erosion and Stormwater Controls*.

☐ All proposed low impact development (LID) practices.

☐ Limits of disturbance, location and details of proposed erosion and sediment control measures with a narrative of the construction sequence/phasing of the project, material stockpiling areas, temporary basins and inspection schedule.

☐ Location and description of where and how construction vehicles and equipment will be cleaned within the site or at designated entry/egress stations at the site boundary.

☐ An estimate of seasonal high groundwater elevation in each area to be used for stormwater retention, detention, or infiltration.

☐ A description and drawings of all components of the proposed drainage system including:

- ☐ Locations, cross-sections, and profiles of all brooks, streams, drainage swales, and their method of stabilization;
- ☐ All measures for the detention, retention, or infiltration of water;
- ☐ All measures for the protection of water quality;
- ☐ Landscape plan/planting schedule for any vegetated stormwater controls;
- ☐ The structural details for all components of the proposed drainage systems and stormwater management facilities, including the following where applicable;
  - ☐ Stormwater treatment structures and detention basins with inverts noted on the inlet and outlet structures
  - ☐ Stone berm level spreader
  - ☐ Outlet protection – riprap aprons
  - ☐ A general installation detail for an erosion control blanket
  - ☐ Silt fences or mulch berm
  - ☐ Storm drain inlet protection. Note that since hay bales must be embedded 4 inches into the ground, they are not to be used on hard surfaces such as pavement.
  - ☐ Hay bale barriers
  - ☐ Stone check dams
  - ☐ Gravel construction exit
  - ☐ Temporary sediment trap
- ☐ Notes on drawings, specifying materials to be used, construction specifications, and typicals; and

☐ Expected hydrology, drainage system hydraulics and supporting calculations.

III. DIGITAL FILE FORMAT

☐ All plans submitted as a .pdf file, one file for each plan. They are in addition to and do not replace any current submission requirements. Accompanying documentation or updated information supplied after submission must also be accompanied by a CD-ROM containing the amended or new information in PDF format. This digital format will be kept in the DPW digital files and may be used to send plans to other City Departments, abutters, peer review engineers, and all other interested parties.

Applicants submitting as-built mylars to the DPW shall also submit a CD- ROM that contains a digital file with all features shown on the mylars. The preferred file format for submission is the AutoCAD drawing (.dwg) format, however, any of the following other formats are acceptable: .dxf (Drawing Exchange File) format, ESRI Geodatabase format (.mdb), ESRI Export file format (.E00), or ArcView Shapefile format (.shp). Each type of feature on the digital file shall be on a separate layer, such as one layer for parcel boundaries, one layer for drainage, one layer for sewer, and one layer for curbs. Datums for all digital files submitted shall be NAD 83/92 (HARN) for the horizontal datum (not NAD 83), and NAVD 88 for the vertical datum. The coordinates of all stormwater infrastructure elements (e.g., catch basins, swales, detection/bioretention areas, piping) shall be included in the digital files.

ACKNOWLEDGEMENT

The undersigned acknowledges that he or she has provided all information and materials required herein or provided a written waiver request with a narrative justification for each item not submitted.

_____
Signature

_____
Name, printed

_____
Title

_____
Date